L5 ANSWER 1 OF 1 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN
ACCESSION NUMBER: 1984-149190 [24] WPIX
DOC. NO. NON-CPI: N1984-110782
DOC. NO. CPI: C1984-063091
TITLE: Epoxy resin compsn. for sealing semiconductor with metal electrode - comprises epoxy resin, hardener, inorganic filler and at least one cpd. such as zinc phosphate.
DERWENT CLASS: A21 A85 E12 E37 L03 U11
PATENT ASSIGNEE(S): (ELED) DENKI KAGAKU KOGYO KK
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
JP--59078229	A	19840507	(198424)*		5	<--

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP--59078229	A	1982JP-0188122	19821028

PRIORITY APPLN. INFO: 1982JP-0188122 19821028
INT. PATENT CLASSIF.: C08G-059-18; C08K-003-24; C08L-063-00; H01L-023-30
BASIC ABSTRACT:
JP 59078229 A UPAB: 19930925
Epoxy resin compsns. prepd. by adding (1) one or more cpds. selected from Zn salts, Mg salts, Sn salts, Pb salts, Be salts and Bi salts of phosphoric acid, polyphosphoric acid, boric acid and oxalic acid to (2) the compsns. comprising (a) epoxy resins, (b) hardeners and (c) inorganic fillers.

(a) Includes e.g. bisphenol A epoxy resin, cresol novolak epoxy resin contg. small amt. of impurities and hydrolysable chlorine. Amt. of (c) (e.g. crystalline silica, Ca silicate) used is 150-450 pts.wt. to 100 pts.wt. of (a). Amt. of (1) used is 0.01-30 pts.wt., pref. 0.1-10 pts.wt. to 100 pts.wt. of (a). If desired, curing accelerators e.g. imidazoles, flame retardants, e.g. SbO3, pigment, e.g. carbon black, mould release agents e.g. montan wax, etc. may be added to the compsns.. The components are mixed sufficiently and melt-kneaded by the use of a hot roll, etc..

The resin compsns. inhibit corrosion of Al electrode, used for sealing of semiconductor contg. Al electrodes.

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FILE SEGMENT: CPI EPI
FIELD AVAILABILITY: AB
MANUAL CODES: CPI: A05-A01E2; A08-M10; A12-E04; A12-E07C; E05-B01; E05-F02; E05-J; E05-L03C; E31-K05; E31-K06; E31-Q; L03-D03G
EPI: U11-A07

PARTIAL TRANSLATION OF JAPANESE UNEXAMINED PATENT PUBLICATION (KOKAI) NO. 59-78229

Title of the Invention: Epoxy Resin Composition

Publication Date: May 7, 1984

Patent Application No.: 57-188122

Filing Date: October 28, 1982

Applicant: Denki Kagaku Kogyo K.K.

Priority claimed: None

SCOPE OF CLAIM FOR PATENT

An epoxy resin composition, characterized in that at least one selected from the group consisting of zinc, magnesium, tin, lead, beryllium and bismuth salts of phosphoric acid, polyphosphoric acid, boric acid and oxalic acid is added to a composition comprising mainly an epoxy resin, a curing agent and an inorganic filler.

DETAILED DESCRIPTION OF THE INVENTION (EXCERPT)

It has been found that, when a semiconductor having aluminum electrode etc. is sealed with the above composition, an inhibition effect of the composition on corrosion of the aluminum electrode etc. is superior to that of a composition comprising salts of these acids with other cations. It is believed that this effect is resulted from the fact that zinc, magnesium, tin, lead, beryllium and bismuth cations, unlike other cations, can passivate a cathode such as an aluminum electrode etc. to inhibit its corrosion, and further, phosphate, polyphosphate, borate or oxalate anions can passivate an anode, thereby both electrodes are passivate and highly inhibited from being corroded.

Next, a curing agent includes phenolic curing agents

such as phenol-novolac resins and cresol-novolac resins, amine type curing agents, and anhydride curing agents, for example. Although there is no limitation to an amount of a curing agent, it is necessary to add a stoichiometric amount of a curing agent to an epoxy resin.

Optional components includes, for example, a curing accelerator such as imidazoles, a non-flammable agent such as brominated epoxy resin and antimony trioxide, a pigment such as carbon black, interface enhancer such as a silane coupling agent, releasing agent such as montan wax and carnauba wax, and flexibilizer such as silicone compounds.